

ABSTRACT OF THE DISCLOSURE

An illumination optical system has superior image formation capabilities, and can radiate a linear beam with excellent illumination uniformity and a narrow line width having a large aspect ratio; the illumination optical system comprises an afocal beam expander system which expands an beam illuminated from a laser light source; a linear beam-forming lens system having at least refractive power in a second direction which is substantially at a right angle to at least a first direction, the linear beam-forming lens system converting the beam, illuminated from said beam expander system, to a linear beam having its long side in said first direction; a lens array section having a plurality of element lenses, arranged along said first direction; and a condenser optical system which illuminates a processed face by reconnecting images of said linear beam from each of said element lenses thereon.

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